



LODI CITY COUNCIL

Carnegie Forum
305 West Pine Street, Lodi

"SHIRTSLEEVE" SESSION

Date: June 25, 2019

Time: 7:00 a.m.

*and via conference call:

1311 Midvale Road
Lodi, CA 95240

For information regarding this Agenda please contact:

Jennifer M. Ferraiolo

City Clerk

Telephone: (209) 333-6702

Informal Informational Meeting

A. Roll Call by City Clerk

B. Topic(s)

B-1 Receive Information Regarding White Slough Water Pollution Control Facility Update (PW)

C. Comments by Public on Non-Agenda Items

D. Adjournment

Pursuant to Section 54954.2(a) of the Government Code of the State of California, this agenda was posted at least 72 hours in advance of the scheduled meeting at a public place freely accessible to the public 24 hours a day.

Jennifer M. Ferraiolo
City Clerk

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CITY OF LODI COUNCIL COMMUNICATION

AGENDA TITLE: Receive Information Regarding the White Slough Water Pollution Control Facility Update

MEETING DATE: June 25, 2019 (Shirtsleeve Session)

PREPARED BY: Public Works Director

RECOMMENDED ACTION: Receive information regarding the White Slough Water Pollution Control Facility Update.

BACKGROUND INFORMATION: Since the White Slough Water Pollution Control Facility (WSWPCF) was originally constructed in 1966, the City of Lodi has consistently made improvements that either expanded capacity or included necessary maintenance on this 53-year-old facility.

Over the past four years, Council has authorized the design and construction of three projects at WSWPCF. Two capital maintenance projects that include corrosion repairs and updating obsolete Supervisory Control and Data Acquisition System components and a new 300-acre-foot recycled water storage expansion pond.

Council will receive a presentation from Staff that will provide an overview of the facility, details about the above mentioned projects that have either been completed or are nearing completion; and a discussion regarding the projects that are programmed over the next 5 years along with a projection of costs.

FISCAL IMPACT: Not applicable.

FUNDING AVAILABLE: Not applicable.

Charles E. Swimley, Jr.
Public Works Director

CES/CES/tdb

APPROVED: _____
Stephen Schwabauer, City Manager

The City of Lodi
**Public Works
Engineering**



White Slough Water Pollution Control Facility Update

Shirtsleeve Meeting
June 25, 2019

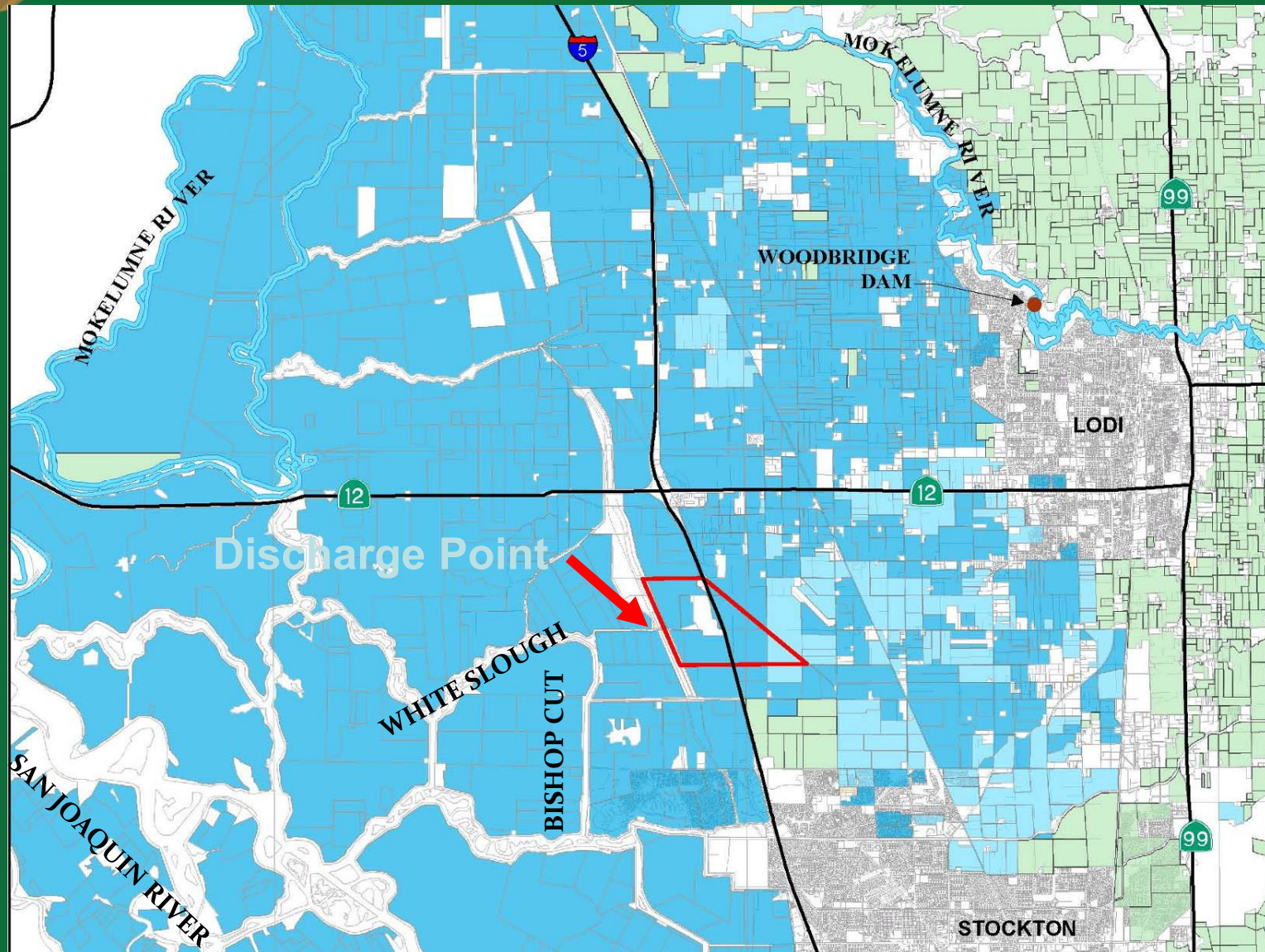


Outline

- Facility Overview
- Project History
- Planned Capital Projects
- Questions

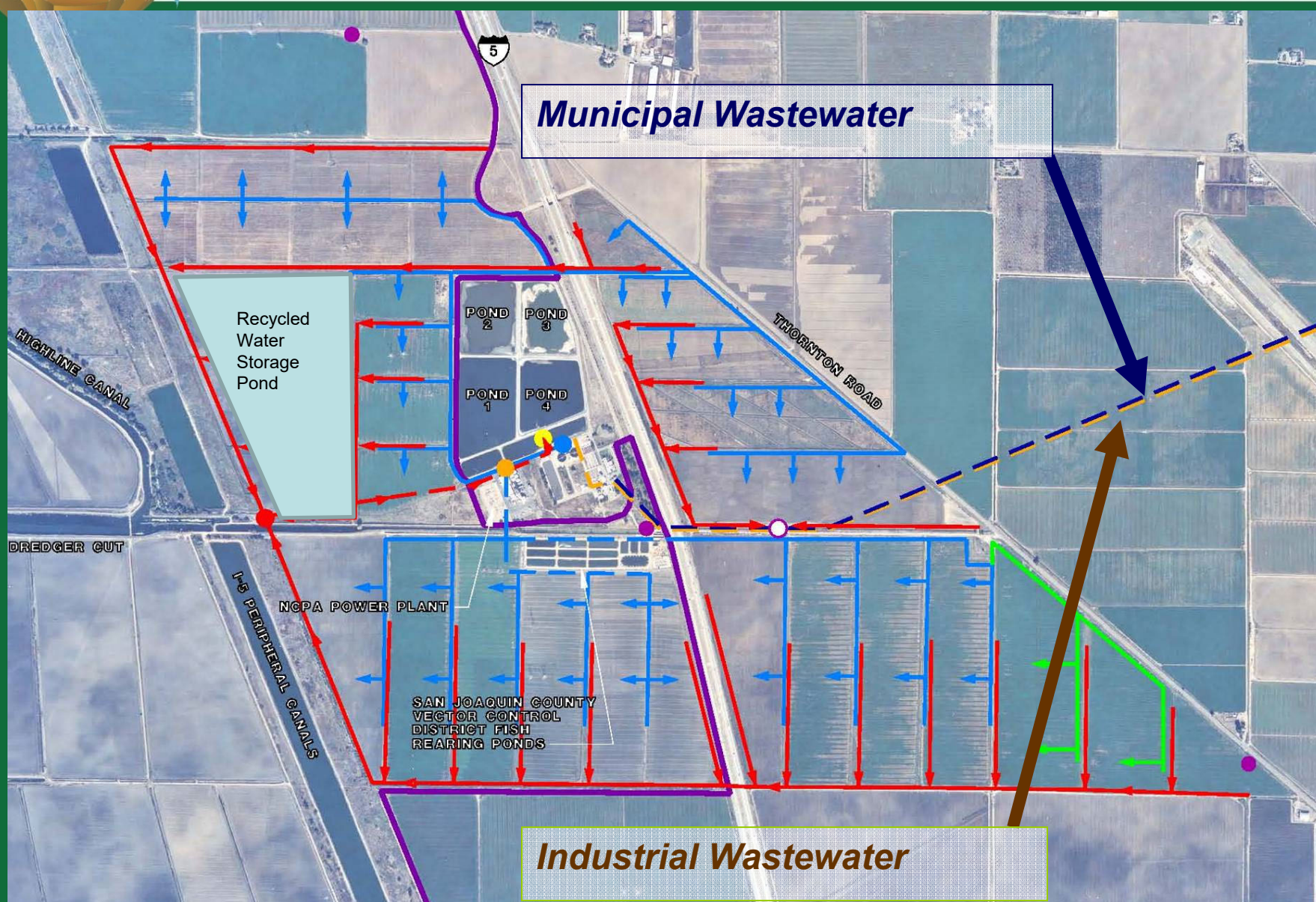


WSWPCF Location

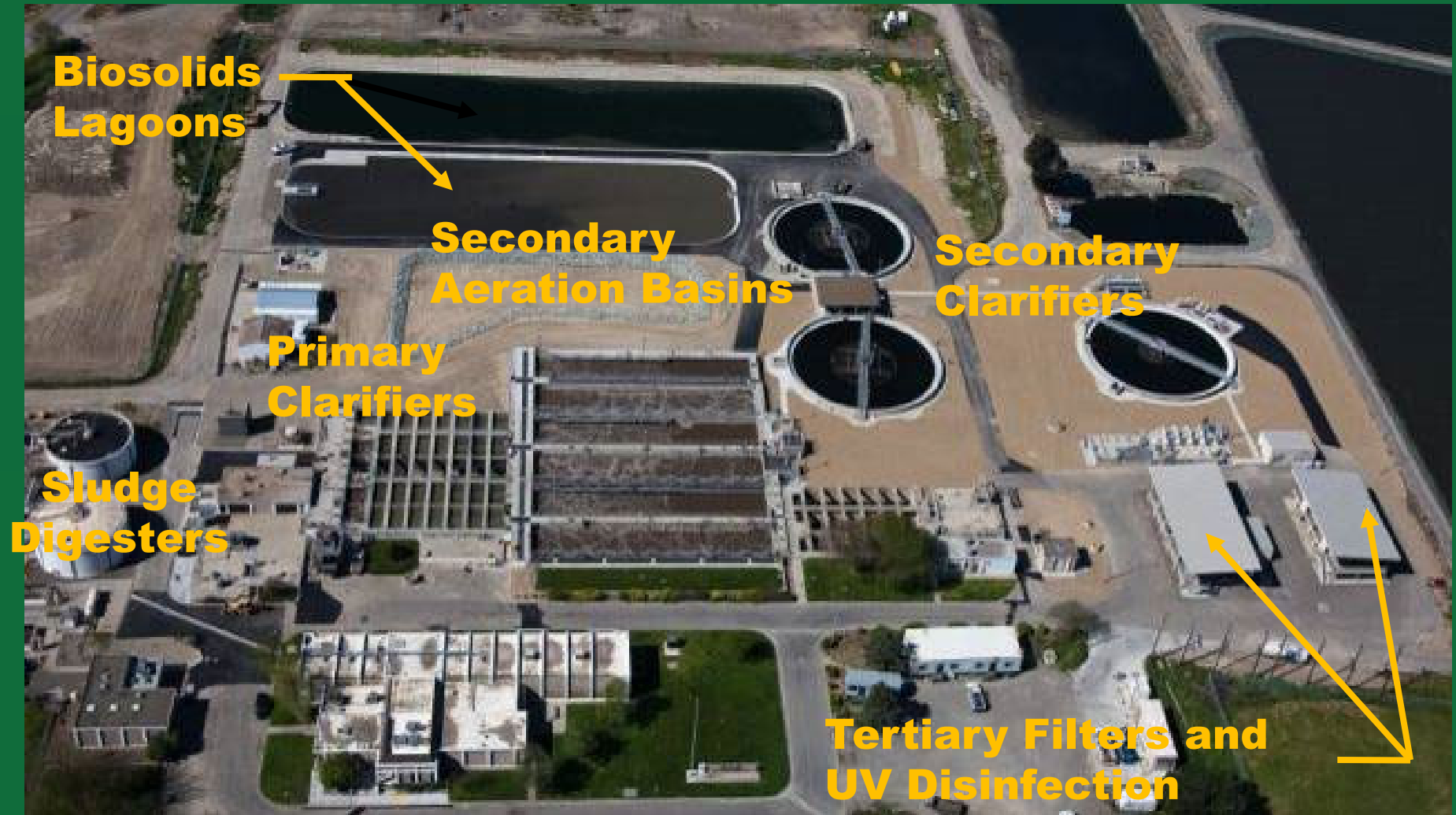




WSWPCF Property



Treatment Plant



Project History



- July 2016 – Corrosion Repair Project
- May 2017 – SCADA Upgrade Project
 - Arc Flash Study
 - SCADA System Upgrade
 - Predesign of Future Improvements
- April 2018 - Recycled Water Pond Storage Project
 - 300 AF Recycled Water Storage Pond
 - Title 22 Tertiary Water
 - Proposition 84 Grant Funded (75%)



2016 Corrosion Repair Project

- Scope of Work:
 - Repaired corroded concrete channels upstream of aeration basins;
 - Replaced corroded steel 24-inch diameter aeration pipeline
 - Repaired corroded steel cover of Digester No. 3
 - Installed water level sensors in storage pond
 - Installed temperature sensors on digester heat-exchanger piping
- Schedule – July 2016 to September 2017
- Construction Cost - \$1,989,872



Corroded Concrete Channel Repair



Typical channel following cleaning and sand-blasting, prior to repair.



Channel following repairs and application of both epoxy-mortar and polyurethane coatings.



Replacement of 24-Inch Aeration Pipe



Pipe that was replaced.



New concrete-encased stainless steel pipe.



Repairs to Digester No. 3 Cover



Corrosion created holes and pitted areas in the interior of the steel cover.

Steel plates were welded over the holes and pitted areas and the cover was coated with chemical-resistant epoxy coating.



2017 SCADA Upgrade Project

- Scope of Work
 - Arc-Flash Study
 - SCADA System Upgrade
 - Investigate UV System Communication Problem
 - Preliminary Design of Future Improvements
- Schedule – May 2017 to October 2019
- Cost - \$770,010



Arc-Flash Study

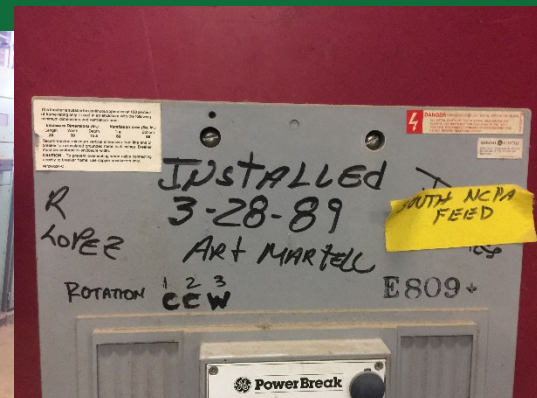
- Arc-flash is not shock (current flow through a body).
- Arc-flash is physical energy (heat, pressure wave, sound) released by a short circuit; an arc-welder is a controlled arc-flash.
- Arc-flash study complete.
- On-going safety effort.





Arc-Flash Study

- Findings
 - Existing electrical equipment is aging, spare parts difficult to find.
 - Arc-flash exposure risk varies throughout the plant.
- Actions taken
 - Arc-flash exposure data base.
 - Settings on equipment protective devices modified to reduce arc flash risk.
 - Conducted OSHA certified training for WSWPCF staff.





SCADA System Upgrade

- Scope of Work:
 - Replace existing / aging server with pair of modern / redundant servers in dedicated server rack
 - Replace existing obsolete graphical control system
 - Replace obsolete graphics.
- Benefits:
 - Increased reliability – regulatory compliance
 - Simplify treatment process troubleshooting and plant diagnostics
 - Increased data acquisition
 - Increased security
 - Allows for wireless support (tablets, etc.) for monitoring and process control



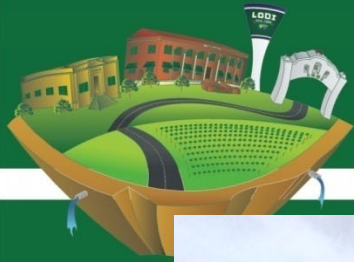
Recycled Water Pond Storage Project

- Scope of Work:
 - Construct 300 acre-ft. Storage Pond
 - Install pump station and conveyance piping
 - Install electrical instrumentation
 - Modify existing structures
- Benefits:
 - Minimizes discharge to Delta
 - Expands recycled water opportunities
 - Benefits groundwater recharge – Sustainable Groundwater Management Act (SGMA)
- Schedule – April 2018 to July/August 2019
- Cost - \$5,125,000



Recycled Water Pond Storage Project





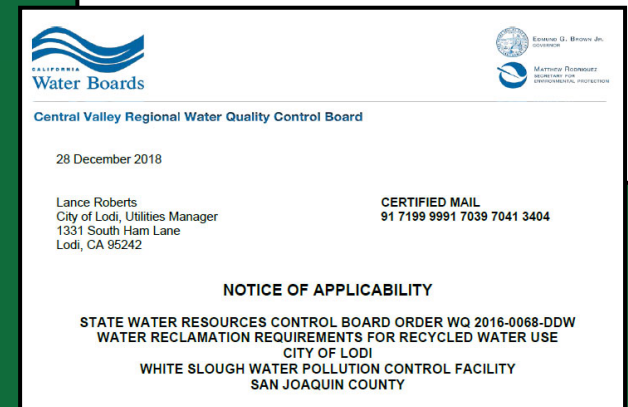
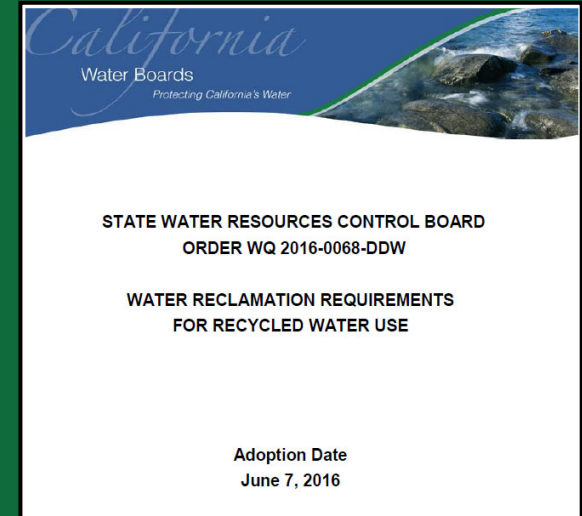
Recycled Water Pond Storage Project





Recycled Water Permit for New Storage Pond

- December 2018: Regional Water Board issued the City a permit under the Recycled Water General Order
 - Storage and use of high-quality recycled water (Disinfected Tertiary) in the new pond
 - Providing recycled water for offsite, public use
 - Specific offsite uses not yet identified, but could include:
 - Landscape irrigation
 - Construction activities
 - Dust control
 - Crop irrigation





Planned Capital Projects

- Aeration Blower Upgrade Project
 - Install 2 new variable speed blowers
 - Energy savings
 - Increased process control
 - Cost \$750,000
 - FY 2019/20
- Considering Energy Service Company (ESCO) procurement



Planned Capital Projects

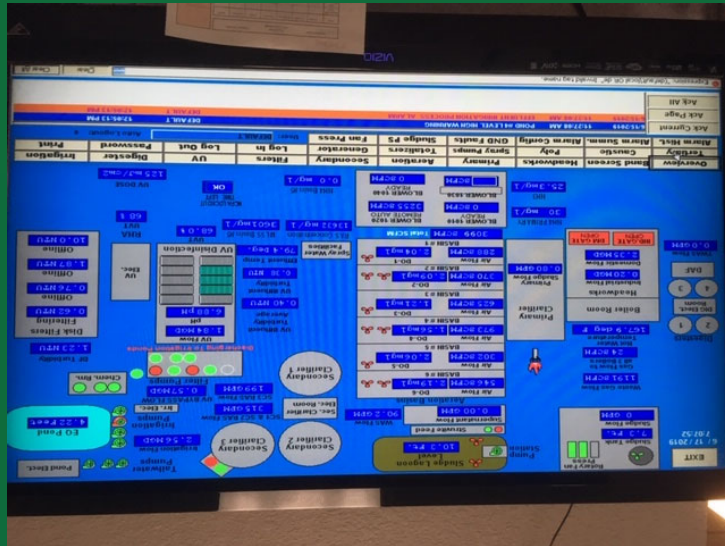
- South Electric Building Replacement Project
 - Relocate existing electric building
 - Upgrade obsolete electric infrastructure
 - Building components reaching useful life
 - Coarse screen and septage receiving improvements
 - Aeration diffuser improvements
- Schedule: Design FY19/20 > 20/21 = \$1.5M
- Construction FY21/22 > 23/24 = \$13.5M
- Cost: \$15,000,000



Planned Capital Projects

- Fan Press Installation Project
 - Install additional fan press
- Schedule: Construction FY23/24
- Cost: \$1,000,000

Visual Examples





Planned Capital Projects

	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
Irrigation Improvements			\$750,000		
Electrical/Screen Design	\$900,000	\$600,000			
Electrical/Screen Construction			\$1,000,000	\$7,000,000	\$5,500,000
Miscellaneous Future Projects	\$100,000				
Cloth Filter Media Replacement	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000
Primary Chain Flights	\$40,000		\$40,000		\$40,000
NCPA Maintenance Generator	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000
Emergency Generator Maintenance	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000
Compliance Studies and Reports	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000
Upgrade Blowers	\$750,000				
Aeration Diffuser Replacement				\$500,000	
Pond Gates	\$15,000			\$15,000	
Band Screen Rebuild		\$75,000			
Primary Skimmers				\$20,000	
Secondary Scum Trough Drives		\$20,000			
DWP-H2 Replacement		\$15,000		\$15,000	
Fan Press Replacement					\$1,000,000
	\$2,215,000	\$1,120,000	\$2,200,000	\$7,960,000	\$6,950,000



Planned Capital Projects

	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30
Irrigation Improvements	\$1,000,000		\$1,750,000			
Cloth Filter Media Replacement	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000
Primary Chain Flights		\$40,000		\$40,000		\$40,000
NCPA Maintenance Generator	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000
Emergency Generator Maintenance	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000
Compliance Studies and Reports	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000
UV Design/Replacement		\$450,000	\$4,000,000			
DWP-H2 Replacement	\$15,000					
Unspecified Treatment Plant Rehab				\$1,000,000	\$1,000,000	\$1,000,000
	\$1,425,000	\$900,000	\$6,160,000	\$1,450,000	\$1,410,000	\$1,450,000



Questions???